levels, shafts and inclines; value of and beautiful sceneries. 000 dollars; average value 300 dollars seasons. per ton; developed by one shaft 200 feet deep, two other shafts each 100 fest deep and several drifts.

Lady Annie, La Belle, Bredemeyer, depth of from 300 to 2,000 feet. Lady in the vicinity. Katherine and Rudolph, bonded by Uintah and American Fork districts, Salt Lake, Æta, Forest and Heter city, Great Salt Lake, Utah and S.I.

Cariboo Silver Mining Company, comprising the Annie, Sonshine, Utah, Orphan and Diehl mines. The veins are two to three feet wide, with volcapic material, forming as it Character of the ore is galena and carbonate of lead, sold at from 26 to

Sugger: fissure vein in quartz'te, nel. Character of the ore, galena high in eilver. and free gold. Galena soli at \$230, and gold ore at \$300 per ton.

per ton.

and plenty of galena ore.

lipper, vein 3 feet wide, deper ton.

Deer Creek Company's mines, Governor Murray, Bertie and Silver mines. Value of ore, 47 to 70 dollars Oquirrh encampment, owned by A. traced for over 3,000 feet, developed by a main incline shaft on the vein.

of lead and chlorides; developed by mine is a ten stamp mill.

several shafts, inclines, drifts and a Tecumseh and Barbee

Cloud Burst, Atlas Company's the future and worthy of the capital-mines, Conqueror, Queen of Shebs, ists' attention. Silver Wave, Echo, Sultana, Missouri, Patrick Henry, Austin, Rose Boyd Kelsey, Jane, Louisa and Mc. scribed in Harrisburg. Call are all good mines, more or less extensively developed.

and lime kilns and five sawmills. ered with magnificent red and white stratined sedimentary rocks, quartz pine timber, streams of crystal water ite and limestone. These sediment ite and limestone. These sediment ite and limestone. These sediment west; a true fissure, traversing a procks were originally deposited ary rocks were originally deposited under water in horizontal layers or power everywhere throughout the alternating strata of sandatone and districts for any and all purposes limestone, which were transformed limestone. Which were transformed limestone. These sediment west; a true fissure, traversing a breact and secondary veins between stone, and as contact veins between breact and magnetic in this part of the district are capable of given and magnetic in the district are capable of given in Beaver mining district. The Big in granite, quartz west; a true fissure, traversing a breact and as contact veins between stone, and as contact veins between hearty of the district are capable of given part of the dist districts for any and all purposes limestone, which were transformed veloped. Value of the ore, 51 per per day centinuosly. Outside of this Copper Belt, Fillmore, Monarch and

and shalls; value of the ore 18 to 21 reduction of ores. The magnificent stone to dolomitic marble. This d.llars per ton. War Eagle, A and B. scenery has justiy given to those dis- whole formation was subsequently owned by M. Hirschman, Mines acjoin wicte the name of the American rent assunder, one part being raised and cross the Pitteburgh and are well Switzerland and they are certainly up and tilted back by powerful voldeveloped. Wild Dutchman, owned worthy the attention of the capitalist canic sgencies, thus forming the by the Omaha Smelting and Refining and tourist on account of the great mountain, its eastern face presenting Company; extensively developed by value of their mines; and for the lat- a cross section of those strata a thouover 10,000 feet in tunnels, drifts, ter, on account of the grand, sublime sand feet thick, and now dipping

the one 30 to 67 dollars per ton. Hotel Keppernick at American angle of about twen y degrees below Russler, Excelsion and Germania, Fork, and Frank Birk, the genial the borizontal. That portion of the bonded by the Utah Consolidated and obliging recorder at Forest City, formation from which this mountain S. & G. Mining company; work on accommodate and provide for all was detached, either remains in its fissure veins three to eight feet wide, travelers. James Chipman at Amer- original horizontal position or sank containing galena, carbonate of lead ican Fork keeps constantly on hand down and was subsequently covered and free gold; lead ore contains 54 a full assortment of all and every. with the truchyte that flowed over it, per cent of fead, or to 99 ounces of thing needed to work the mines and sainst the eastern base of the ness of quarry 200 to 400 feet. The solver, and 5 to 13 dollars gold per to reside in comfort, and well suptor; gold ore assays from 130 to 21. Died near and at the same at all southern been of the Granus base of the market and mottled and phant, Oneida, Day Dawn, Victory ton; gold ore assays from 130 to 21. plied near and at the same at all

HARRISBURG MINING DISTRICT.

The mines of this district are eiuthe lodes or veins in Miller hill at a slightest doubt but coal will be found

If we observe the large extinct vol-Bell and Mary Ellen group on one of the strata. The great plains bear ued at from 37 to 800 dollars per ton, all probability on a level with the crater was once the vent through in the centre. A tunnel run from the southwest, surrounding table mountains, and and of the Katherina on the vein, the remnants of which said lake we ly to the surface from below through will develop the same to a depth of see to-day represented by the Great the great fissure made by the break with 40 to 60 degrees. over 2 000 feet, said tunnel will be Salt Lake, Utah and Sevier Lakes. in the limestone and quartzite; this perfectly dry. A splendid view is ot. The shore lines of the ancient lake fissure, following the contact with the tained from the north end of the are distinctly marked and clearly cb. trachyte, forms the lode. Rudolph, situated on the summit of servable all along the base of Utah's Bald mountain, over the Cutton woods, great mountain ranges. Since then the strata has been bent, folded and broken by volcanic action. The upper portion has been washed away, leaving the reefs as the anticlinal croppings dipping towards each other on opposite sides of the valleys. Here and there the formation is covered

were a cap to the sandstone. These beds of red and white sand-139 dollars per ton. The property is stone, in particular the white sandwell developed and will prove very stone, which is of a fine: texture valuable and to the owners dividend than the red, are impregnated with chloride of silver, carbonate of cop-per, and iron. Some of the latter developed by two chafts and one tun. appear in nodules and assay very

The dissimilarity of the ore in these nd gold ore at \$300 per ton.

Treasure; owned by J. Chapmin & careful sampling of all the material The vein is trace. stones.

Pierce and D. Clift; extensively de- words, in explanation, the mineral and the hanging wall of partially slaty schist on the east. veloped; character of ore, galena and was precipitated at the same time decomposed trachytic material. The Merrimac is a vein fissure, carbonate of lead; sold daily at from that the beds of sand and clay, which From those facts it will readily be plainly traccable several hundred feet ized to their full extent. Indeed, few 30 to 80 dollars per ton. Shipments are now marl-sandstone and clay seen that the dip and strike must in the calcareous, slaty schist east of ore regular with fair profits. Am. shale were formed. This mineral vary at points; especially there, where of the limestone belt. erglis and Non Compromise, owned must then, of course, have been in the softer parts-the dolomite-are by the Comstock Mining Company, solution and mingled with the waters more readily decomposed and croded, vein fissures do p netrate into the do these Beaver and Garfield County, L. E. Holden, president; vein 3 feet which as waves precipitated the min- than the quartite. Therefore the quartite cast of the lime belt. The wide: developed by several shafts and eral among the sand and clay, and width of the lode varies in places, gash veins appear at intervals from tricts of these counties. About eighadits; value of ore 30 to 87 dollars at such places where there was the Both walls are covered with a dry 20 to 350 feet, parallel in course and iron in greater quantities. As both comprising the Happy Boy, Ruthven, I do not find it necessary to adopt either of them at this time.

per ton. Knight of Pythias and district are: Bonanza, which has been opened by shafts, tunnels and drifts. M. Bredemeyer; vein 3 feet wide, The shaft cuts the deposit at a depth

Letde Mining Company have Knight Templar and Royal Arch, opened their ore deposit at many color. The lode steel contains in its strata veins, but they are not so deowned by A. M. Bredemeyer; vein places, and a shaft with a double from several inches to 8 feet wide; compartment is continually adcharacter of ore, galena, carbonate vancing downward. Attached to the

Tecumseh and Barbee & Walker main tunnel over 300 feet long, which are developed very extensively and will tap the vein at a depth of over producing largely. The Stonewall 1,200 feet. Belorophan, owned by Jackson, St. Johne, Shepherd & Leabaryts) carrying chloride of silver, of this is compact and hard, and is 50 per cent. of lead, 26 ounces or limestone is consistency of this is compact and hard, and is 50 per cent. of lead, 26 ounces or limestone is consistency of this is compact and hard, and is 50 per cent. of lead, 26 ounces or limestone is consistency of this is compact and hard, and is 50 per cent. of lead, 26 ounces or limestone is consistency of this is compact and hard, and is 50 per cent. of lead, 26 ounces or limestone is consistency of this is compact and hard, and other lead, 26 ounces or limestone is consistency of this is compact and hard, and other lead, 26 ounces or limestone is consistency of the property the vein, exposing fine, marketable eye, Chloride Chief, California, Emore in paying quantities. Sierra, Lost Maid, Comet and the Leopard, Maggie, McNally, Pride of mines of Louis Olover, situated on the West, Regins, Thompson, Sam-Miller Hill; extensively developed, aris, Great Western, Butte, Vandershowing well defined lodes with good bilt, Stormont, Doffin, Mand, and several others, all very promising for

Twenty-two miles north of Leeds is Silver Belt district in Iron County, Bud, Grand View, Cariboo, Swift- the character of the ore and formasure, Tydi, Modoc, Piame, Elizabeth, tion of which are similar to those de-

SAN FRANCISCO MINING DISTRICT.

The above mines of American the Beaver valley and the Wau Wau Fork and Silver Lake have produced valley is a short range running north Assay value of the ore is \$60 per ton; quently removed to gain working Prince Albert, Philadelphia Sulphur, thousands and thousands of tons of good ore in the past and they fairly promise to give millions more. The summits. The northermost and districts contain the Sultana Smelt- highest of these summits is composed of ore in sight, representing a value and amalgamating will cost under south, depth unknown. Beaver Lake ing Works (three shafts and one re of trachyte of volcanic origin, the of \$16,000,000. The amount of ore the best management \$20 per ton, veberatory furnace) fifty charcoal middle one being granite, and the extracted is 155,000 tons. Dividends making a total of \$30 per ton. Alsouthermost and lowest, called the paid in the past up to date of \$2,900, lowing 20 per cent loss in reduction, ore per ton, 75 per cent. lead and 90 and north-western part of Tintic we The towering mountains are cov- Grampiin Mountains, consist of the 000. ered with magnificent red and white stratified sedimentary rocks, quartz connected with, and beneficial to by great heat and pressure—the cent. lead and 30 to 125 conces of lime-belt a large quantity of ore (in Niagara mines. mining and the concentrating and sandstone to quartite and the lime-

southern base of the Grampian moon- spotted. tain, and now forms a sort of undu- STAR, NORTH STAR AND ROCKY MINING lating plain extending several miles eastward. The quartzite and dolo mites are in contact with the granite ated about 329 miles southwest of Salt on the north, on a line running Borussia, Cologne, Meacoque, Wacht Lake City. The geological forms nearly east and west, and also in con am Raein and Sparrow Hawk, bonded tion is stratified red and white marl tact with the trachyte on the east, by the Utah Consolidated S. & G. sandstone, at places greatly broken and south side of the mountain. Mining company. These mines are up and eroded; here and there the The mines are in this latter contact located on true fissure veins two to sandstone alternates with thin seams at the e-stern ba e of the Grampian nearest principal business places are five feet wide in the quartrite, con- of clay shale; the cementing mate- mon tain, the footwall being massive Mineraville, Milford and Beaver. taking galens and carbonete of lad, rial between the sandstone is lime; fayer, of quartrite and dolomite, and Minersville is in Etar district, Beaver sold at from 47 to 87 dollars per ton. petrefactions of trees, branches, the hanging tracbite and in the con They are developed by numerous leaves and ferns, such as are peculiar ter of a great mineral best or district. tunnels, drifte inclines and shafts and to the coal formation, are everywhere one main tunnel which will tap all in great abundance. I have not the traceable on the surface slong the Picche in the southeast part of entire eastern base of the Grampian mountain to the granite on the north a distance of about a mile and a half, which the volcanie forces came direct-

The principal mine are the Horn on the main lode having sever I ex- tain facing Beaver Valley. tensions north and south; Carbonate, Cave, Comet, Morrison, New Haves,

As it would take too much space

sources have their pros and come and the walls thereof. The hanging belong to one family of fissures of The leading mines in Harrisburg The following material is thereby dis- such points where they cross the bed iron, then 30 feet of tough olue clay others prove. the hanging wall in the upper part | The ore is silver, lead, copper, anof the vein, and has resisted decom- timony, combined with sulphur. ing this kind of ore. All the other phur of these metals. ore of this immense deposit has un-On the high dividing ridge between that ore is silver-bearing. This lode places; the veins are small and a part

Carbonate; course of lode, east and | per ton.

contains 30 per cent. copper, 30 to smelting furnaces. 180 onnces of silver and a trace to \$8

in gold per ton. country rock, granitic porphyry; ore good smelting ore per day. contains 27 per cent copper, 30 to 90 per ton.

phyry; ore contains 40 per cent. lead, talist. 30 to 150 cances of silver.

Italian marble quarry; course of

DISTRICT.

These districts are situated to Beawhich is a low range in the southeastern ed e of the great Utah and Nevada Desert. This range is somewhat isolated in its position. The county, Utah Terri ory, about 200 Nevada.

The geological structure of the Pi cacho range consists of belts of metathe Utah Consolidated S. G. & Mining company. These mines are lo
the southern parts of Utah, together 10 degrees west, and south 10 degrees stone, flanked on both sides by ignecated on a true flesure vein 6 inches with the volcanic rock which appears east by the magnetic needle The ous rock, also porphyry, lava and to 3 feet wide in the quartzite, term- here everywhere, we cannot be sur- mines are at the very centre or fecus trap, common to the interior ranges ing the connection between the Silver prised at the foldings and contortions of this great upheaval where all the geological evidence points to its con- the Sierra Nevada and the Wasatch and the Deer Creek group and Milk conclusive evidence to the cresion tinuance down to the deep. The mountains. The metamorphic action

The general course of the strata is north and south, and dipping east

My principal examination was confined to the North Camp district across the mountains east and west North Camp or Shenandcah is situ-Silver which is the original location ated on the east flank of the moun-

except a few, are in a beit of magne-Bradshaw, Woolcott, Dexter, Cyprus, mountain. In reality they are in Mammoth, Grampian, Jay Hawker, the low eastern foothills of the range. Sherman, Florida, Lulu, Dolly This magnesian limestone or dolo-Mack, Triangle, Antwerp, Vander-mite belt is the chief mineral-bearbilt, Governor, Yellow Jacket, Rat- ing rock on the east side of the moun-

In this limestone belt the ore deand time to describe all of the above posits appear, first as fissure veins mines, I will therefore here confine crossing the beds northeast and southmyself to a few, the leader of which | west; second as strata veins conforming entirely to the strike and dip of The vein is traceable for several the strate in general. The strate Co.; vein six to eighteen inches wide, is a great necessity. The assey value miles, from the southeastern end of veine appear only in the centre of developed by a long main tunnel varies from \$20 to up in the thouand several inclines on the vein; sands. There are only two reasons to where the dolomite gives place to and south with dip east. The fissure are valued at from 30 to 300 dollars account for the presence of ore in granite. The width of the vein at veins ron northeast and southwest discovery. Several shafts sunk upon these sandstone strata. The first is the Horn S lver discovery is from forty with a dip of 50 to 70 degrees north-Little Cloud or Mountain Lion, by sublimation, the mineral vapors to sixty feet, showing galena in places owned by Messrs. F. Birk, Watson & the possible owned by Messrs. F. Birk, Watson & the possible owned by Messrs. F. Birk, Watson & the possible owned by Messrs. F. Birk, Watson & the possible owned by Messrs. This shows that they cross the beds obliquely in the horizontal plan out the length of the possible owned by Messrs. This shows that they cross the beds obliquely in the horizontal plan on the possible owned by Messrs. The showing galena in places of the imported article when its properties show strong and well it would seem, take the properties show strong and well it would seem, take the properties show that they cross the beds obliquely in the horizontal plan on the properties show strong and well it would seem, take the properties show that they cross the beds obliquely in the horizontal plan on the properties show strong and well it would seem, take the properties show that they cross the beds obliquely in the horizontal plan on the properties show that they cross the beds obliquely in the horizontal plan on the properties show that they cross the beds obliquely in the horizontal plan on the properties show that they cross the beds obliquely in the horizontal plan on the properties show the properties show Co; well developed, containing good the ores in the pores of the sand- claim. The vein dips north 80 de and at right angles on their line of of its being found thus free from ar The second is a contemporaneous nation of about 70 degrees from the nature. The gash or cross veins here been amply proved, they bid fair to velope, the gh several tunnels and formation of the ore with the beds in horizontal. The foo wall of the lode continue through the lime beds from become of very much value. In this shaft Mis. Maid, owned by Mesers which the same appears; in other consists of quartz te and limestone the quartz te on the north to the

There is every evidence that the indicator of, and a guide to, the lode stone beds, which proves that they wall of said lode has been penetrated contemporaneous age. These veins miles south and situated in Garfield, for a distance of 200 feet or more, are from three to five feet wide; a: closed: Adjoining the ore, 20 to 25 veins, they form rich chambers of feet of clay stained with oxide of ore as the Shenandoah, Hickory and

merging gradually into a decomposed | I call the deposits conformable to trachytic mass of a reddish gray the course and dip of the strata, ecormous vain fissure, two general fined as to justify the name well. classes of material; the larger por- It is possible that they are only spurs, tion is what is termed smelting ore; and branches from the fissures. The this is soft and earthy, consisting of ore in both are the same and it seems the old works a stained kind of a wall sulphate, exide and carbonate of that the filling of both occurred at was struck which was followed southlead, carrying silver. The smaller the same time. The gangue or vein ward for 200 feet where ore was portion is heavy spar (sulphate of matter is a true vein-quartz; some struck. The average value of the ore

position on recount of its position in Some of the surface ores show carthe lo e and on account of the refras- bonates of lead, chlorides of silver and tory nature of the material compos- copper in combination with the sul-

The larger part of this ore can be dergone oxidation and other changes. milled by dry crushing and passing Rollins, Rattler and Stampede mines. There is no doubt but, as depth is through a Statefeldt furnace; also they The course of most of the veins is gained, the ore will be found in its contain a great deal of base metals. northeast and southwest; they appear original condition, that is, in the The assays range from 37 to 350 dolcalled "horse," in the vein filling. character of the limestone, mining silver. this would leave a net profit of \$30 to 130 onness of silver.

fact the most of the ore) is emelting | Preuss mining districts; The Con-

Comet; course, east and west; ore; two-thirds of the ore is at least tact Marble and the Contact Lead country rock, granitic porphyry; ore the better suited for reduction in the

The mines in the north part of the district can easily be made to supply silver. The mines of the American Cactus; course, east and west; several bundred tone and more of

I do not hesitate in declaring here westward into the mountain at an ounces of silver and a trace of gold emphatically that Star, North Star and Rocky Mining districts are very Yellow Jacket; course, north and good and valuable districts, worthy south; country rock, granitic por- the attention of both miner and capi-

The principal mines of Star Mining district are: Merrimac, Flora, beds, northeast and southwest; thick- Hickory, Taylor, Mars, Harrington, and St. Mary.

The leading mines in North Star Mining district are: Hickory, Merrimac, Shenandoab, Temperance, Flora, Cortez, Osceola, Rebel, Talisver county, in the Picacho mountains man, Harrington, Midas, Stalwart and Esmeralda.

MINING DISTRICTS OF BEAVER AND GAR-

FIELD COUNTIES.

Beaver county contains, in addi-

to the Star, Rocky and other districts easterly of the same, Bradshaw, Lincoln, Galena, Gordon, Granite, Preuss, miles southwest of Salt Lake City, on Beaver, Ohio and Warsaw Mining districts. The nearest principal business places to this district are Milford and Beaver city on and near the line of the Utah Central railroad. The veins or lodes in those districts are from two to six feet wide, carrying from 40 to 54 per cent. lead and from 20 to 130 ounces of silver per ton. mines are at the very centre or fecus trap, common to the interior ranges There are also other lodes which carry from 10 to 27 per cent, copper (mostly as oxides and carbonates and Maid on the other side. These mines are developed by several inclines and whole basin was certainly at some reshafts; the character of the ore is mote period a great inland sea, part tinct crater filled with volcanic ashes and in fact here much more than district immense deposits of sulphurand along the surface for a considerets and oxides average over 40 per cent, of the pure metal. Copper stain is frequently visible on the billsides and there is not the least doubt but some sections of Beaver county in all probability contain many more valuable lodes and mineral deposits and they will surely be tound if proper search is made and the numerous indications followed up as they should All the mines situated in this area be. Some part of Beaver county will surely become in time very import-Cactus, Magnolia, Samaria, Talis- sian limestone 600 to 800 feet wide, ant for copper smelting and also for man, Stewart, Silveropolis, Rosa, running along the lower flank of the the reduction of antimory and histhe reduction of antimony and bismuth ores. Twelve miles west of Beaver city several veins of bismuth ore have been found. These lie near together in a magnesian limestone of silurian age, and vary from one to tler, Dives, Summit, Hoodoo, Ameri- tain; the veins and ore deposits are nine feet in thickness. The gangue cus, Massachusetts, Quartzite, Nia-gara, Morning Star, Hope, Colburn, Great Republic and Young America. ries.

more numerous and richer here, than is of a serpentinous character, and carries lime garnets, oxides of iron, tre-polite and other minerals. The tre solite and other minerals. The ore, a sulphide and oxide, free from areenic and antimo y, varies from one to six per cent, of the total vein matter, but it is easily concentrated. In the concentrated product, which gave 30 per cent. of bismuth, molybdenum was found, which in view of general use, may prove an important these properties show strong and well graphite and deposits of sulphur, which will, at no distant day, be utilplaces offer such inducements to capital or have such good prospects of a golden future in our fair Utah as or more correctly as the mining disteen to twenty miles southeast of most vegetable mold, carbon and ferruginous clay which serves as an dip all along the course of the lime- Warsaw mining district commences Antimony mining district, extending twenty-one miles east and twenty formerly Iron county, Utah.

THE PRINCIPAL MINES.

The leading mines are: In Brad shaw Mining district, the Cave, Hoodoo, Cypress, Sherman, Triangle, Governor and Summit mines.

The Cave mine is extensively developed. The main tunnel starts on the west side of the mountain, at a distance of 700 feet; 300 feet beyond for the emelters. The formation or country rock is blue lime and quartz-

In Liconin mining district: The Creole, December, Donnerberg, Delaware, Forest Queen, Galena, Quincy, Rolline, Rattler and Stampede mines. as contact veins between porphyry

In Gorden mining district: The mine No. 2. Lead and silver ore de- taining kaolin. posit. Course, northwest. Value of

In Granite mining district: The

and Silver and other mines. The ore of the latter contains per ton 20 per cent. lead and 50 to 185 ounces of Antimony company consist of the Albion, Alta, Blackbird, Signal, Lottie, Ida, Last Chance, Nevada, Flagstaff, Elvina, Stella, Ada, Emily, Star, Emms, Black Ben, Buckeye, Mammoth, Daisy, Pluto, Loomis and four other claims situated in Coyete mining district on a tributary of the East Fork of the Sevier river at the south end of Grass Valley in Garfield (formerly Iron) county, Utah. While there is in the aggregate a considerable quantity of exidized ore present, assaying upwards of 80 per cent, antimony, the great mass of the ore is stibuite, carrying about 72 per centof antimony and 28 per cent, of sufphur. Professor Newberry, of Calumbia college, New York, epeaking of these mines, says: "The antimony deposits proved to be unique in kind, of great geological interest and of much economic importance and the quality of the ore is equal to any known," the American Antimony company was organized in 1881, by Anthony Godbe, of Salt Lake City, for the purpose of acquiring and working this very valuable property, since which time the owners have been engaged in making extensive developments and in erecting such works for the reduction of the ore into regulus or etar metal. These developments have resulted in uncovering and opening large bodies of ore sufficient for a many years' supply for the smelting works which are at the present time, December 11th. 1883, about completed and ready to start up. The ore lies in almost horizontal beds, and is easily and cheaply mined and extracted. At an experimental trial of the works lately made several tons of regulus were procured and shipped to New York, and the quality is said to be superior to the best imported metal. This is accounted for by the phenomenal purity of the ore, containing as it does not even a trace of those objectionsable features so common in all hitherto known antimony ores, such as arsenic, copper, lead, and sez. Indeed, as will be seen by analysis be low, the natural, unrefined ores from these Grass Valley mines, are more free from such ingredients as arsenic, copper, lead, etc., than the admittedly best imported, refined metal (Cockson's). The analysis of the latter was made by Messrs. Booth, Garrett and Blair, of Philadelphia, and that of the Grass Valley ores by Professor

Lehman, of Baltimore, Maryland. Analysis of Cockson's Refiged Star metal (regulus): Arsenic, 1.008; copper, 0.021; lead, 0.410; iron, 0.144; cobelt and nickel, 0.013.

Analysis of American Antimony Co's Sulphide ore, or Grass Valley: Metalic Antimony, 71 320; Sulphur, 28.130; iron, 0 005; arsenic, none; tin, none; copper, none; lead, none; quartz, 0.483.

The sulphur being estimated in process of smelting the Grass Valley antimony ore is necessarily absolutely merits become known to consumers, and as soon as railroad facilities now in contemplation shall be provided, the owners expect to ship the ore in large quantities to the antimony smalters in England. The reduction works now just about completed are perfect of their kind, and were erected under the direction of skilled smelters whose experience was obtained in the business in England and Hungary. The present capacity of these works is about two tons of metal per day, but they are so arranged that this amount can be increased to any required capacity. It has been often said by competent authorities, that Utah in the great extent and variety of her mineral resources bide fair to outstrip all her rivals in the Rocky Mountain region, and I can only verify this in all and every respect, for this is based upon plain facts and realities.

TINTIC M NING DISTRICT

Is situated in the Oquirrh range about 75 miles south-southwe-terly from Salt Lake City and contains about twenty square miles. In the northwest part of the district, including the Eureka and Copperopolis mines, the geological structure is limestone of the silurian age. The iron, making it a very desirable ore | western portion of the district we observe at the base of the mountain quartzite. The ore in the northwest and western part of the district occurs in true fissures bearing northeast and couthwesterly with a very near vertical dip. There appear also numerous gash veins cutting the country rock in d flerent directions, and so making the whole appear as a complete network of veins. The form of suphurets. Remarkable is lars per ton. The average a say is and limestone. Value of the ore per the absence of wall material, so- 75 dollars. Owing to the silicious ton, 23 per cent, lead, 100 ounces in lead, copper, gold, silver, bismuth, arsenic, antimony and pyrites of iron and copper, varying in value Boston Sulphur, Conqueror Sulphur, from \$20 to \$360 per ton. The veins are here and there barren, the ore appearing in pockets only. In the syenite and feldspar porphyry, con-

In the eastern and north-eastern observe the ore deposits as appearing in granite, quartzite and limecent crystals, and as stalactites and stalagmites, in eaves and crevices.